

What is claimed is:

1. A method for image processing, wherein

the field of view of a stereo camera is
segmented in the form of a matrix by angle and by
5 measured range value based on parallax,

matrix data is calculated for a segment
where a detected edge exists, and also for segments
surrounding said segment, said calculated matrix data
then being assigned to each of said segments,

10 a search is made through said assigned
matrix data to find a segment that has matrix data
exceeding a predetermined threshold value, and

if said detected edge exists in said found
segment, edge data of said edge is taken to represent the
15 position of an object.

2. A method for image processing as claimed in
claim 1, wherein said matrix segmentation is done based
on a prescribed angle and in accordance with measured
range values for integer values of parallax.

20 3. A method for image processing as claimed in
claim 1, wherein said calculated matrix data is a value
calculated by adding the matrix data for the present
cycle of detection to the total value of the matrix data
accumulated up to the last cycle of detection.

25 4. A method for image processing as claimed in
claim 3, wherein, when said edge is not detected, said
calculated matrix data is a value calculated by
subtracting predetermined matrix data from the total
value of the matrix data accumulated up to the last cycle
30 of detection.

35 5. A method for image processing as claimed in
claim 3, wherein, when the value of the matrix data to be
added to the segment where said edge exists is denoted by
 P_1 , then the value of the matrix data to be added to each
of the segments neighboring on left, right, upper, and
lower sides of said segment is denoted by P_2 , and the
value of the matrix data to be added to each of the

segments neighboring on diagonally upper and lower sides of said segment is denoted by P3 (where $P_1 > P_2 > P_3$).

5 6. A method for image processing as claimed in claim 1, wherein said calculated matrix data is a value calculated by multiplying the total value of the matrix data accumulated up to the last cycle of detection, by a matrix coefficient (> 1) for the present cycle of detection.

10 7. A method for image processing as claimed in claim 6, wherein, when said edge is not detected, said calculated matrix data is a value calculated by multiplying the total value of the matrix data accumulated up to the last cycle of detection, by a coefficient smaller than 1.

15 8. A method for image processing as claimed in claim 6, wherein, when the coefficient by which to multiply the matrix data of the segment where said edge exists is denoted by Q1, then the coefficient by which to multiply the matrix data of each of the segments neighboring on left, right, upper, and lower sides of said segment is denoted by Q2, and the coefficient by which to multiply the matrix data of each of the segments neighboring on diagonally upper and lower sides of said segment is denoted by Q3 (where $Q_1 > Q_2 > Q_3$).

20 9. A method for image processing as claimed in claim 1, wherein said edge data includes range and angle information.

25 10. A method for image processing as claimed in claim 1, wherein said camera is a monocular camera and said matrix segmentation is done by segmenting the field of view of said monocular camera based on the angle and on the range obtained from upper and lower positions on a screen.

30 11. A method for image processing, wherein
35 the field of view of a stereo camera is segmented in the form of a matrix by angle and by measured range value based on parallax,

matrix data is calculated for a segment where a detected edge exists, and also for segments surrounding said segment, said calculated matrix data then being assigned to each of said segments,

5 a search is made through said assigned matrix data to find a segment that has matrix data exceeding a predetermined threshold value,

if said edge does not exist in said found segment, said threshold value is successively increased,

10 a search is made successively to find a segment that has matrix data exceeding said increased threshold value, and

15 if an edge detected at a past point in time corresponding to said increased threshold value exists in said found segment, edge data of said edge is taken to represent the position of an object.

12. A method for image processing as claimed in claim 11, wherein said matrix segmentation is done based on a prescribed angle and in accordance with measured range values for integer values of parallax.

13. A method for image processing as claimed in claim 11, wherein said calculated matrix data is a value calculated by adding the matrix data for the present cycle of detection to the total value of the matrix data accumulated up to the last cycle of detection.

14. A method for image processing as claimed in claim 13, wherein when said edge is not detected, said calculated matrix data is a value calculated by subtracting predetermined matrix data from the total value of the matrix data accumulated up to the last cycle of detection.

15. A method for image processing as claimed in claim 13, wherein when the value of the matrix data to be added to the segment where said edge exists is denoted by P1, then the value of the matrix data to be added to each of the segments neighboring on left, right, upper, and lower sides of said segment is denoted by P2, and the

value of the matrix data to be added to each of the segments neighboring on diagonally upper and lower sides of said segment is denoted by P_3 (where $P_1 > P_2 > P_3$).

16. A method for image processing as claimed in claim 11, wherein said calculated matrix data is a value calculated by multiplying the total value of the matrix data accumulated up to the last cycle of detection, by a matrix coefficient (> 1) for the present cycle of detection.

17. A method for image processing as claimed in claim 16, wherein, when said edge is not detected, said calculated matrix data is a value calculated by multiplying the total value of the matrix data accumulated up to the last cycle of detection, by a coefficient smaller than 1.

18. A method for image processing as claimed in claim 16, wherein, when the coefficient by which to multiply the matrix data of the segment where said edge exists is denoted by Q_1 , then the coefficient by which to multiply the matrix data of each of the segments neighboring on left, right, upper, and lower sides of said segment is denoted by Q_2 , and the coefficient by which to multiply the matrix data of each of the segments neighboring on diagonally upper and lower sides of said segment is denoted by Q_3 (where $Q_1 > Q_2 > Q_3$).

19. A method for image processing as claimed in claim 11, wherein said edge data includes range and angle information.

20. A method for image processing as claimed in claim 11, wherein said camera is a monocular camera and said matrix segmentation is done by segmenting the field of view of said monocular camera based on the angle and on the range obtained from upper and lower positions on a screen.